**15-COMMUNICATION SYSTEM**

**1. Amplitude Modulation**

Modulation factor,  or  2. If Amax and Amin are the maximum and minimum amplitudes of the carrier wave, then  3. Modulating voltage,  4. Carrier voltage,  5. Instantaneous voltage of A.M. wave is    6. Component of frequencies of A.M. wave are: (a) Carrier frequency = *fc* (b)  (c)  7. Bandwidth = 

**2. Length of Antenna and Demodulation Process**

Length of a dipole antenna,  2. Condition for satisfactory detection by a diode 

**3. Bandwidth of Communication channels**

Number of channels = 

**4. Propagation of Radiowaves and Range of TV Transmission**

1. Critical frequency for sky wave propagation, 

Where *Nmax* is the maximum electron density in the ionosphere. Frequencies blow *fc* are reflected back to earth. 2. Ground wave propagation is limited to 1500 kHz. 3. Frequencies above 20 MHz are carried through satellite communication. 4. Wave of UHF/VHF regions can propagate through space wave or tropospheric wave. 5. The range of TV transmission.  Where *h* = height of antenna and *R* = radius of earth. 6. Population covered = Population density x area 7. Maximum distance covered in LOS communication, 